AMENDMENTS TO THE CLAIMS

1.   (Currently Amended) A computer-implemented method of reconstructing a regular 3D model by feature-line segmentation, comprising using a computer to perform the steps of:

(a)   inputting original 3D model data;

(b)   building 3D feature-lines according to the original 3D model data;

(c)   converting the 3D feature-lines into 3D threads, wherein the 3D threads are composed of connection joints, connection lines, and loops, wherein the connection joints are intersection points of the 3D feature-lines, the connection lines are the 3D feature-lines between two connection joints, and the loops are closed zones constructed by the connection lines;

(d)   determining ~~sample numbers of~~a number of sample points on each connection line, adding or deleting the loops, and outputting the 3D threads;

(e)   producing a regular triangular grid sample model according to the 3D threads;

(f)   projecting the regular triangular grid sample model into the original 3D model to produce a reconstructed 3D model; and

(g)   redetermining the number of the sample points on~~sample numbers for~~ each connection line, reading or redeleting the loops, and repeating steps (e) and (f) if the reconstructed 3D model does not satisfy resolution requirements, and outputting the reconstructed 3D model if the reconstructed 3D model satisfies the resolution requirements,

wherein the sample points for the reconstructed 3D model ~~is~~ are located on the ~~3D feature-lines~~connection lines despite of the ~~sample numbers~~number of the sample points.

2.　　(Original) The computer-implemented method as claimed in claim 1, wherein the 3D feature-lines in step (b) are based on the exterior appearance and structure of the original 3D model.

3.　　(Cancelled)

4.　　(Currently Amended) The computer-implemented method as claimed in claim 1, wherein step (e) further comprises the steps of:

constructing regular triangular grids in each loop according to the sample ~~numbers~~ points of each connection line in step (d); and

combining the closed regular triangular grids of the loops as the regular triangular grid sample model.

5.　　(Currently Amended) A computer-implemented method of reconstructing a regular 3D model by feature-line segmentation, comprising using a computer to perform the steps of:

inputting original 3D model data;

building 3D feature-lines according to the original 3D model data;

converting the 3D feature-lines into 3D threads, wherein the 3D threads are composed of connection joints, connection lines, and loops, wherein the connection joints are intersection

points of the 3D feature-lines, the connection lines are the 3D feature-lines between two

connection joints, and the loops are closed zones constructed by the connection lines;

determining ~~sample number of~~a number of sample points on each connection line, adding

or deleting the loops, and outputting the 3D threads;

producing a regular triangular grid sample model according to the 3D threads;

projecting the regular triangular grid sample model into the original 3D model to produce

a reconstructed 3D model;

outputting the reconstructed 3D model,

wherein the sample points for the reconstructed 3D model ~~is~~ are located on the ~~3D~~

~~feature-lines~~connection line despite of the number of the sample points ~~sample numbers~~.

6.   (Original) The computer-implemented method as claimed in claim 5, wherein the

3D feature-lines in the build step are based on the exterior appearance and structure of the

original 3D model.

7.   (Cancelled)

8.   (Currently Amended) The computer-implemented method as claimed in claim 5,

wherein the producing step further comprises the steps of:

constructing regular triangular grids in each loop according to the sample ~~numbers~~points

of each connection line in the determination step; and

combining the closed regular triangular grids of the loops as the regular triangular grid

sample model.